

## QUARTERLY REPORT

### January – March 2003

### Ames Laboratory (Ames)

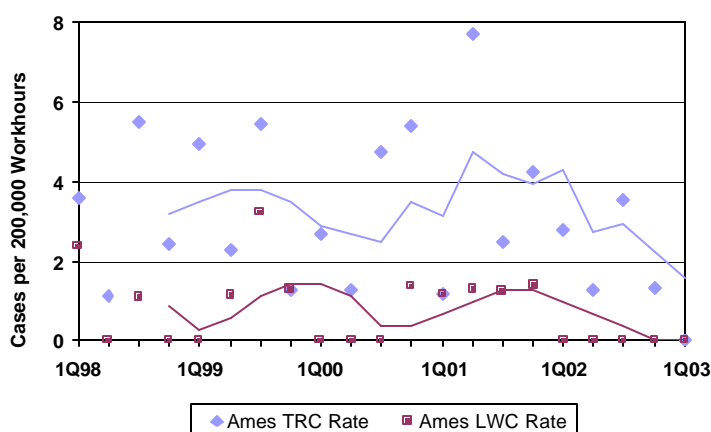
#### Safety-Related Mission Areas of Interest

Ames Laboratory's mission is to conduct fundamental research in the physical, chemical, materials, and mathematical sciences and engineering which underlie energy generating, conversion, transmission and storage technologies, environmental improvement, and other technical areas essential to national needs. Ames core competencies are in the areas of advanced materials synthesis, characterization and processing, computational and theoretical sciences, environmental characterization and remediation technologies.

#### Areas for Management Attention

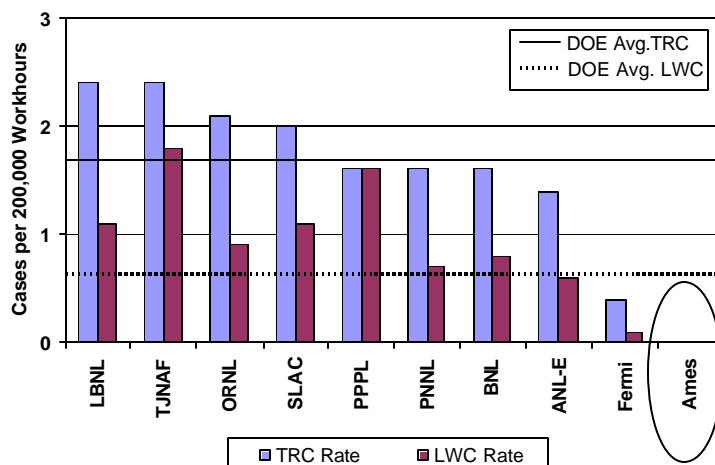
1. There were two off-normal ORPS reports this quarter. The first (CH--AMES-AMES-2003-0001 Improper Management of Peroxide-forming Chemicals) resulted from the observation that peroxide-forming and shock sensitive chemicals were being stored past their expiration date. A thorough inspection of all facilities was immediately undertaken to identify additional improperly stored, labeled or expired chemicals. A team of safety experts from Ames Laboratory and Iowa State University conducted this inspection. A vendor was secured to assist with disposal of some of the chemicals. Laboratory management issued additional direction to staff on this matter and procedures have been modified with additional controls. The other ORPS (CH--AMES-AMES-2003-0002 Notice of Violation) resulted from missing information on an Iowa Department of Natural Resources (IDNR) notification form related to an asbestos removal. The missing information was immediately provided for the specific form in question. Improvements have been institutionalized to prevent reoccurrence. Previous similar submittals had contained sufficient information such that the IDNR was satisfied with the resolution.
2. As a result of continuing management attention Ames Laboratory experienced very positive improvement in their safety performance in that no recordable accident/injuries or lost work day cases were experienced for the 1<sup>st</sup> quarter 2003.

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter

<b>Key Performance Areas</b> (There were 2 occurrences at Ames for the 1st Quarter)	
<b>Near Misses (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Criticality Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Radiological Concerns (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>AB Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Occupational Safety/Industrial Hygiene (1)</b> <ul style="list-style-type: none"> <li>Improper Management of Peroxide-forming Chemicals. Peroxide-forming and shock sensitive chemicals were stored past the expiration date. <i>A thorough inspection of all facilities was immediately undertaken to identify additional improperly stored, labeled or expired chemicals. A vendor was secured to assist with disposal of some of the chemicals. Laboratory management issued additional direction to staff on this matter and procedures have been modified with additional controls.</i></li> </ul>	<b>Environmental Releases/Compliance (1)</b> <ul style="list-style-type: none"> <li>Notice of Violation. Information missing from a Notification of Demolition and Renovation for Iowa Department of Natural Resources. . <i>The missing information was immediately provided for the specific form in question. Improvements have been institutionalized to prevent reoccurrence. Previous similar submittals had contained sufficient information such that the IDNR was satisfied with the resolution.</i></li> </ul>

### Progress on Safety Management Initiatives

- Ames Laboratory in coordination with the Ames Area Office has completed an independent baseline evaluation of their Environmental Management System December 2-6, 2002. A group from the Environmental Protection Agency (EPA) Region VII Office has performed the Environmental Management Review. The review team determined that the Laboratory's Environmental Management System could easily be incorporated into the existing Integrated Safety Management System and with some minor program improvements would be in compliance with the ISO14001 Standard. In March the EPA informed Ames that the formal report has been produced in draft and is presently under final internal review.
- Ames Laboratory is actively seeking disposition paths for unneeded radiological materials. Recently, a Cesium source was transferred to ANL-West for their use. Disposition paths for remaining items are being evaluated with assistance from DOE.
- Ames hosted a meeting of an Iowa business assistance group and presented a brief overview of its Environmental Management System as a best practice program.

## QUARTERLY REPORT January-March 2003 Argonne National Laboratory – East (ANL-E)

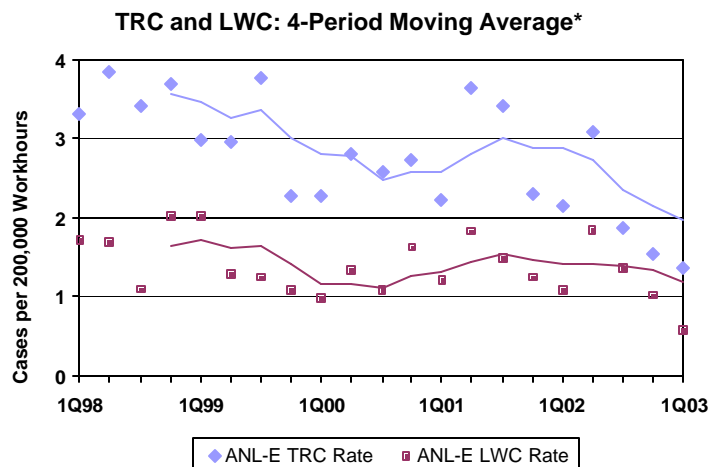
### Safety-Related Mission Areas of Interest

ANL-E supports DOE's missions in science, energy resources, environmental stewardship, and national security, with lead roles in science, operation of scientific facilities, and energy.

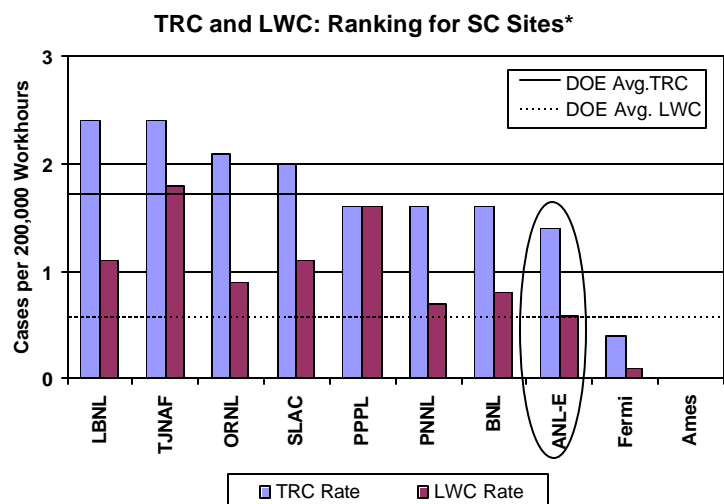
1. The Title V Clean Air Act Permit Program Permit for ANL-E was revised in March to limit coal combustion at the Argonne steam plant such that the site will not be a major source for hazardous air pollutant emissions. The reason for the revision was to provide flexibility for future science and operational initiatives by greatly reducing the likelihood that future emission standards for hazardous air pollutant emissions would apply at ANL-E.
2. Preparations were made for the off-site disposal of contact handled transuranic (TRU) waste. This will lead to a) significant reductions in the on-site inventory of TRU waste and consequently, a reduction in radiological risk, and b) a reduction in operational waste management costs. Up to 178 drums are expected to be shipped in 2QCY03.
3. ANL-E was granted continuing accreditation of their bioassay laboratory, in accordance with the protocol of the DOE Laboratory Accreditation Program (DOELAP). This involves performance testing and an on-site external assessment. The accreditation is effective for two years.

### Areas for Management Attention

1. AAO and ANL continue to make excellent progress towards completing by July 2003 all corrective actions to address weaknesses identified during a May 2002 OA review of ES&H and Emergency Management. The review identified weaknesses in hazards identification and control for non-experimental work; ineffective radiation protection program elements; poorly implemented nuclear safety requirements; poorly defined emergency management roles and responsibilities; and inadequate training and drills (as reported in 2QCY03).



\*Data as of May 28, 2003; composite of all contractors and subcontractors.



\*Ranked by TRC for 2003-1st Quarter

## Key Performance Areas

(There were 7 occurrences this quarter.)

<b>Near Misses (2)</b> <ul style="list-style-type: none"> <li>A service contractor slipped on the metal grating of a platform floor 40 feet up on an effluent stack, stepped into the fixed ladder floor opening, fell 2-3 feet and caught himself, sustaining a laceration on his leg and a bruise on his hip. <i>Corrective actions have been implemented.</i></li> <li>A carpenter cut through electrical conduit containing an energized circuit without following appropriate LO/TO procedures. <i>An initial investigation and some actions have been taken; remaining corrective actions are under discussion.</i></li> </ul>	<b>Occupational Safety/Industrial Hygiene (1)</b> <ul style="list-style-type: none"> <li>A temporary employee smashed her right thumb in a drawer. She washed it and bandaged it. She was diagnosed with a cellulitis a few days later and admitted to the hospital for 2 days. <i>Corrective actions have been implemented.</i></li> </ul>
<b>Radiological Concerns (3)</b> <ul style="list-style-type: none"> <li>Three personnel contaminations detected via work area exit surveys. A boot, a shoe, and a wrist were contaminated. No uptakes. <i>Corrective actions have been implemented.</i></li> </ul>	<b>Criticality Infraction (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Environmental Release/Compliance (1)</b> <ul style="list-style-type: none"> <li>Total Residual Chlorine levels at Outfall #007 exceeded the mandated allowable limit due to an open fire hydrant valve. <i>The environmental violations stopped in December 2002 when the open valve was identified and closed. ANL-E is evaluating root cause corrective actions. ORPS report filed in March 2003 after Illinois EPA issued a violation notice.</i></li> </ul>
<b>Fire Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>AB Infractions (0)/Potential Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Material Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Equipment Degradation (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Conduct of Operations (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Other (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>

### Progress on Safety Management Initiatives

- The ANL-E Pollution Prevention (P2) Program was a 2003 DOE P2 Award Winner for incorporating training, awareness and practices that significantly contribute to a complex wide commitment to pollution prevention. Past and current P2 initiatives resulted in over \$11 million in revenues and cost savings to research and operations.
- ANL management has adopted the TapRooT® system for root cause analysis, problem investigation, and proactive improvement. Thirty-two ANL and DOE staff attended this training (sixteen ANL and DOE managers attended an overview session) in 4QCY02, and many more were scheduled to attend the training in April 2003.

## QUARTERLY REPORT

*January-March 2003*

## Brookhaven National Laboratory (BNL)

**Safety-Related Mission Areas of Interest**

BNL's major mission is to conceive, design, construct, and operate complex, leading edge, user-oriented facilities in response to the needs of the DOE and the international community of users; carry out basic and applied research in long-term, high-risk programs at the frontier of science; develop advanced technologies that address national needs and educates new generations of scientists and engineers.

1. The last remaining nuclear fuel was shipped from the BNL Brookhaven Medical Research Reactor (BMRR).

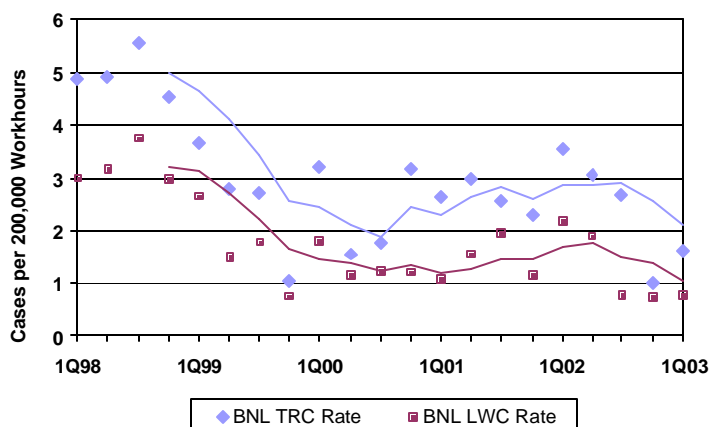
New York State Police inspected the trucks and their respective loads for compliance with the Level VI Commercial Vehicle Safety Alliance standard, the highest level of inspection for commercial vehicle shipping, thus allowing the shipment to proceed without further inspections along the route.

2. DOE reviewed and approved BNL requests to re-characterize both the former Hazardous Waste Management Facility (from Nuclear Hazard Category 2 Facility to a Radiological Facility) and the Brookhaven Medical Research Reactor (from a Nuclear Hazard Category 2 Reactor Facility to a Radiological Facility)
3. The BNL Energy, Environment and National Security Directorate (EENS), received a commission from DOE-NNSA, and The Department of Homeland Security - Transportation Safety Authority, to perform side-by-side field tests of motor vehicle radiation "portal monitors". To support this effort, a Radiation Detection Test and Evaluation Center (RADTEC) Field Test Site has been established on a section of the BNL facility.

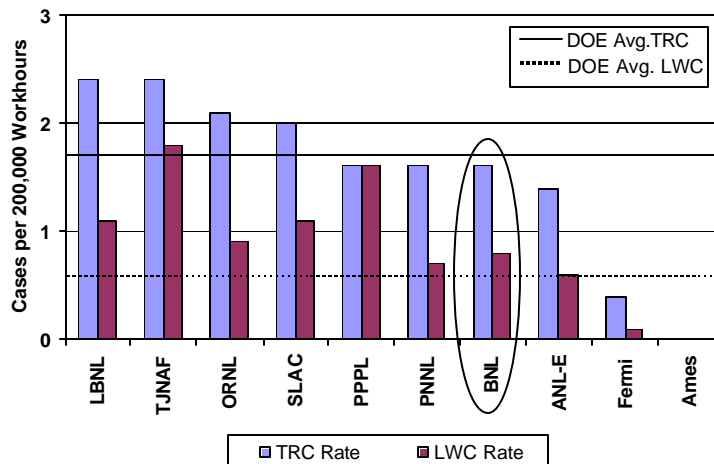
**Areas for Management Attention**

1. The CERCLA cleanup of Brookhaven National Laboratory is scheduled for completion in FY05. Projects to be addressed have been identified in the EM baseline. There are known legacy issues and waste items that are not in the EM baseline and currently have no defined path forward to disposal or remediation.

BSA is developing a detailed estimate of expected Legacy costs. The costs to address these items will likely fall to Office of Science or other programs.

**TRC and LWC: 4-Period Moving Average\***

\*Data as of May 28, 2003; composite of all contractors and subcontractors.

**TRC and LWC: Ranking for SC Sites\***

\*Ranked by TRC for 2003-1st Quarter

## Key Performance Areas

(There were 6 events and occurrences this quarter.)

<b>Near Misses (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>AB Infractions (0)/Potential Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Radiological Concerns (2)</b> <ul style="list-style-type: none"> <li>Two personnel contaminations (on back of head and wrist, respectively). No uptakes indicated. <i>A corrective action plan for the first incident involving strontium contamination on the back of the head has been developed and is in process of being implemented. This plan includes modifications to work planning and control procedures and technical work documents as well as an evaluation on some design modifications to the shielded cell. A lessons-learned of this occurrence will be communicated complex wide. The corrective action plan for the second incident involving contamination to a researcher's wrist is ongoing. This corrective action plan includes training for the researcher on the equipment and contamination control and review of the PET Researcher Training Program to assure that documentation is accurate and all researchers are trained on the appropriate equipment.</i></li> </ul>	<b>Shipping QA (1)</b> <p>Outgoing surveys of two spent fuel shipping casks shipped to SRS indicated that all smear survey results were less than 1000 dpm/100cm<sup>2</sup>. During processing at SRS, contamination survey results of up to 180K dpm/100cm<sup>2</sup> were discovered. <i>Even though there is no more irradiated fuel at BNL, and a shipping scenario is unlikely, a corrective action plan was developed to assure that if an irradiated fuel shipment becomes necessary in the future, the cask contractor will be required to decontaminate the cask prior to shipment to BNL, provide a written certification that the cask has been decontaminated, and provide to BNL their decontamination procedure for review and approval.</i></p>
<b>Fire Safety (1)</b> <ul style="list-style-type: none"> <li>A 150-pair communication cable was severed during excavation to remove an old underground fuel oil tank. Fire alarm communication was lost until repairs could be made. <i>A corrective action plan was developed and implemented and all items closed out including; a lessons learned communication; restitution from the contractor for damage; and, revision to the digging permit and associated procedure to include contractor briefing and signoff (on the permit) prior to initiating work.</i></li> </ul>	<b>Environmental Releases/Compliance (1)</b> <ul style="list-style-type: none"> <li>BNL was cited for three deficiencies identified during an August 02 inspection of all RCRA permitted storage areas at the WMD complex by the New York State Department of Environmental Conservation. <i>BAO has effectively resolved a container labeling finding but does dispute the two remaining findings. BAO has made USEPA aware of its position in that regard and is in discussions with the NYSDEC to have the two remaining findings rescinded.</i></li> </ul>
<b>Criticality Infraction (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Occupational Safety/Industrial Hygiene (1)</b> <ul style="list-style-type: none"> <li>PAAA Noncompliance Report NTS-CH-BH-BNL-NSLS-2003-0001 was issued when a facility user from a nearby medical college intentionally violated facility access requirements at the National Synchrotron Light Source (NSLS). The individual was informed that she was not allowed access to the Controlled Area of the NSLS because her facility access and radiological training had expired. The individual, ignoring these instructions, later entered the Controlled Area. <i>A causal analysis was conducted, and the NSLS user privileges for that individual were suspended. Also evaluating additional corrective actions.</i></li> </ul>	<b>Material Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Equipment Degradation (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Conduct of Operations (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Other (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>

## **Progress on Safety Management Initiatives**

- DuPont Safety Resources completed a benchmark assessment of BNL Safety Programs and conducted a Leadership Workshop for BNL Senior Managers. The results of these activities will be used to develop a Strategic Safety Plan; a plan designed to further enhance BNL efforts in reducing workplace injuries and achieving world-class safety.
- As part of the agreed upon FY 03 contract performance measures, BSA is pursuing an independent third party evaluation of the Management System Assessment Program. A draft evaluation protocol has been developed and a team of independent “experts” is being assembled.
- DOE/ BSA hosted the BNL Cleanup Program “Pathway to Completion” Workshop on (March 26-27). Along with BNL Senior Management, representatives from DOE (HQ, CH, and BAO respectively), Rocky Flats, West Valley, and BSA corporate were also in attendance. The focus of the workshop was on managing the performance of the remaining work, and the transfer of long-term response activities to the Office of Science.
- The Brookhaven National Laboratory Community Advisory Council (CAC) has begun the planning phase for a waste minimization/pollution prevention workshop, focusing on local government and small business. The CAC, whose 25 members represent the cross-section of BNL's community, will seek to utilize the Laboratory's well-established and successful "waste min/p2" program to highlight the many rewards and lessons of such a program. BAO will also participate in the one-day workshop to be held later this year.
- The BNL Ground Water Group, part of the BNL/EM Directorate, began start-up testing and operation of a Pilot Unit that will utilize ion exchange resins to remove elevated levels of Sr-90 from groundwater. An evaluation report on the effectiveness of this treatment process is expected in December of 2003.

**This page intentionally left blank**



## QUARTERLY REPORT

January - March 2003

## Fermi National Accelerator Laboratory

## Safety-Related Mission Areas of Interest

Fermi National Accelerator Laboratory advances the understanding of the fundamental nature of matter and energy by providing leadership and resources for qualified researchers to conduct basic research at the frontiers of high-energy physics and related disciplines.

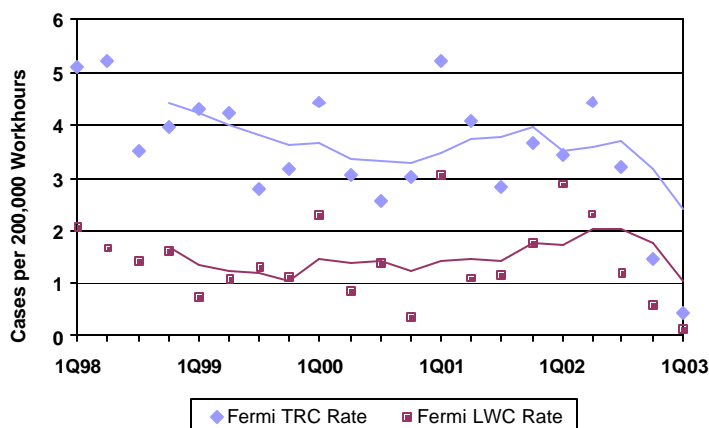
1. **Accelerator Shutdown Completed without Injury:**

In January 2003, Fermilab conducted a three-week shutdown of the accelerator for upgrade and maintenance activities that cannot be performed while the accelerator is operating. Safe and efficient completion of this work was essential to permit continued and improved High Energy Physics research. Planning for this shutdown began in November 2002. Laboratory management determined what activities were to be performed and identified a single individual to oversee the shutdown activities. Shutdown activities included tasks such as installation of shielding, magnet replacement, amplifier replacements, upgrade of beam positioning monitors, and general preventive and corrective maintenance. Over 250 employees and subcontractors were involved in this activity. Radiation and Oxygen Deficiency training (and medical clearance) were provided to subcontractors and employees. The shutdown was completed without a single recordable injury. The planning efforts that were applied to this shutdown will be incorporated into future shutdown activities.

## Areas for Management Attention

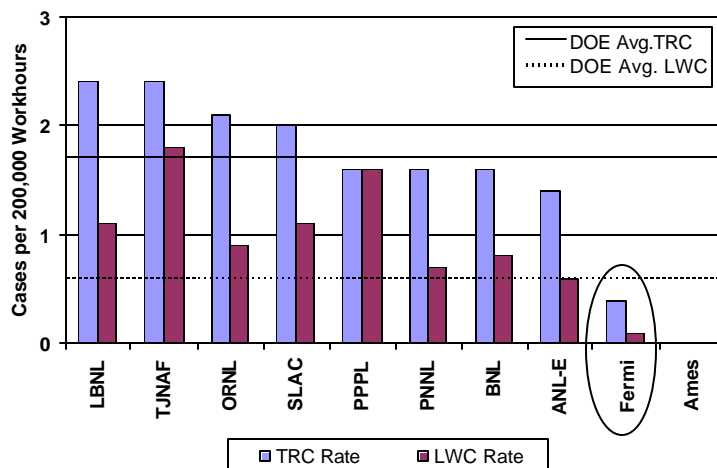
1. **Fermilab Continues to Experience Very Few Injuries:** In the first quarter of CY2003, Fermilab employees experienced three recordable injuries. Only one was a lost workday case, as it resulted in two restricted duty days. There were no subcontractor injuries. Fermilab had worked about 1.3 million hours since the last lost workday case of 2002. This is the best single quarter performance Fermilab has ever experienced and an indication that recent efforts undertaken to reduce injuries are having a positive effect.
2. **Laboratory Director's Panel on Subcontractor Safety:** The Laboratory Director has established a panel on contractor safety. Among its members are representatives from DuPont and Exxon Mobil. The Associate Director for Laboratory Support is chairing the panel. The panel, created in response to recent subcontractor incidents involving violation of lock-out/tagout (LOTO) procedures, has been tasked to examine barriers that may be keeping subcontractors from working safely at Fermilab. The panel initiated its review during March 2003 and is anticipating that a report will be issued in May or June 2003.
3. **Oversight of the Subcontractor Construction Work:** This continues to be a priority due to the March 6, 2003 near-miss incident documented on page two of this report.

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter

<b>Key Performance Areas</b> (There was 1 event and occurrence this quarter.)	
<b>Near Miss (1)</b> <ul style="list-style-type: none"> <li>An excavation sub-contractor operating a backhoe nicked a live 480-volt feeder cable. The insulation was impacted sufficiently to trip the breaker. During hand-digging to uncover the cable, they discovered the damaged cable, which had been reenergized. [All corrective actions listed below.]</li> </ul>	<b>AB Infractions (0)/Potential Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Radiological Concerns (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Criticality Infraction (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Environmental Releases/Compliance (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Fire Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Occupational Safety/Industrial Hygiene (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Material Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Equipment Degradation (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Conduct of Operations (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Other (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>

## Progress on Safety Management Initiatives

**External regulation efforts:** The Argonne National Laboratory-East (ANL-E) compliance inspection by the Nuclear Regulatory Commission is being scheduled for May 2003. In March 2003, the Fermi Area Office (FAO) held discussions with the DOE Argonne Area Office and ANL-E to solicit access for one individual from the FAO and one from Fermilab to attend the compliance inspection as observers. Attendance at these proceedings will provide useful insight into future inspections at Fermilab.

**ORPS Re-engineering effort:** During this quarter, Fermilab and FAO staff have reviewed the draft ORPS documents (DOE Order, Causal Guide, and Causal Analysis Manual) and participated in an all-day video teleconference call with DOE-EH on the subject. Fermilab has formally provided comments on the draft documents through RevCom. FAO and the Office of Science have been discussing the identified areas of concern.

### Near-Miss Corrective Actions :

Subcontractor removed its Site Superintendent and the sub-tier subcontractor Trackhoe Operator from the project at Fermilab's request; written letters of discipline were given to the two subcontractor employees who hand dug around the energized line for not carrying out their responsibility to stop unsafe work; hazard analysis for excavations was changed to clarify when underground utilities were required to be de-energized and all previous procedures were nullified; incident was discussed with all employees during the daily work-planning meeting; Subcontractor Project Manager made his expectations quite clear regarding working, following procedures, and the employee's right and responsibility to stop work due to safety concerns without fear of reprisal; reviewed and revised the hazard analysis program to assure all employees are trained on the correct hazard analysis; all employees affected by the new procedure were trained and new employees will be trained in this procedure as the need arises; LOTO training was reviewed and revised to emphasize the individual employee's responsibility and how to perform LOTO; Associate Director for Operations Support halted all excavation work on the NuMI site until he personally was present to assure that utilities had been de-energized and employees were working safely; Laboratory Director's Safety Panel, chaired by the Associate Director for Laboratory Support, was created after prior incidents involving subcontractors and LOTO to examine barriers that may be keeping subcontractors from working safely at Fermilab. This incident, and the causal factors associated with it, will be incorporated into the scope of the Panel.

# QUARTERLY REPORT

## January - March 2003

### Lawrence Berkeley National Laboratory (LBNL)

#### Safety-Related Mission Areas of Interest

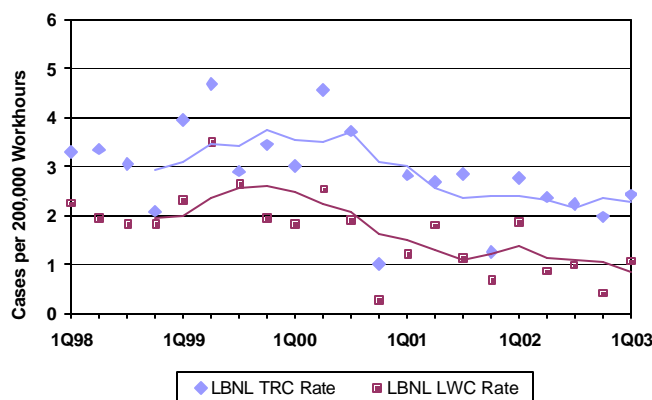
The Ernest Orlando Lawrence Berkeley National Laboratory (Berkeley Lab) performs research in advanced materials, life sciences, computing sciences, energy efficiency, detectors, and accelerators to serve America's needs in technology and the environment. As stewards of a national laboratory, the Lab is committed to fulfilling its scientific mission by performing all work safely, in a manner that strives for the highest degree of protection for employees, participating guests, visitors, the public, and the environment.

1. Staff members from EH&S Division, Facilities Division and Nuclear Science Division prepared for LBNL senior management a conceptual project plan and budget estimate for the decontamination and decommission of the 88-inch Cyclotron. This follows DOE's announcement that the facility may be closed due to funding cutbacks in the FY 2004 draft budget.
2. As part of the Lab's effort to remove legacy material and structures, work is currently underway to remove beamline components and shielding blocks from a stipulated zone principally in Building 51A (i.e., part of the main Bevatron building). Funding was of \$15 million was also requested in March 2003 for the proposed demolition of the Experimental Beam Hall Building (Building 51B).
3. DOE's Office of Environmental Management (EM) has ended its programmatic support of the Lab's environmental restoration program and proposes to terminate the program in 2006. The Lab's Environmental Protection Group is working with the BSO and SC-HQ to develop a strategic plan to guide its transition

#### Areas for Management Attention

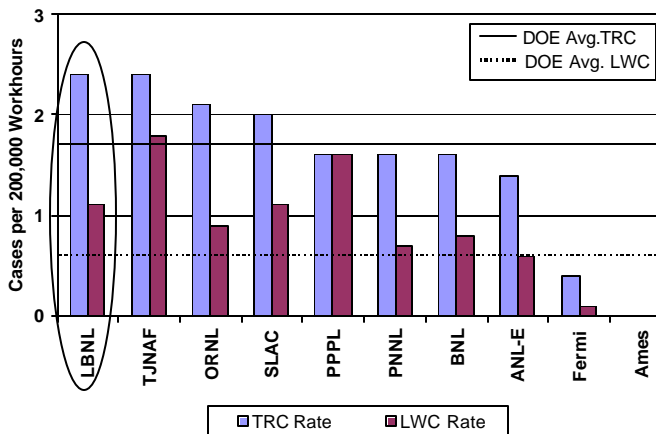
1. In response to the DOE Office of Science guidance following the onset of hostilities in Iraq, LBNL completed a 100% wall-to-wall confirmatory check of radioactive material and radiation source inventories. The radiation work authorization and sealed source authorization (RWA/SSA) program inventories maintained in the RADAR database were utilized to provide updated inventory printouts to each of the approximately 100 principal investigators who then verified them by confirming their physical holdings. This timely and complete inventory process was made possible by the well designed and implemented radiation authorization program in place at LBNL.
2. Good progress has been made on the corrective actions identified to address the noncompliance issues reported in the 3 Noncompliance Tracking System (NTS) Reports submitted in 2002 and this quarter. Corrective Actions were developed for:
  - "Unauthorized Use of P-32 Material and Personal Skin Contamination"
  - "Programmatic Degradation of RWA Implementation"
  - "Unauthorized Removal of Radiation Shielding"
3. As a result of an occurrence report two years ago involving deficient leak and overflow monitoring of underground storage tanks (UST), the Laboratory's Facility Division embarked in upgrading its UST monitoring systems. Installation of new monitoring systems for five of the Lab's eight USTs is now complete. The new monitors provide overfill protection where they will alarm at the 90% level. For the USTs at Building 2, an outside horn has been installed to notify the fuel truck operator when the overfill limit is reached. Also new leak sensors have been placed in the gasoline and diesel dispenser pans at Building 76 where none existed previously.

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter

<b>Key Performance Areas</b> (There was 1 occurrence this quarter.)	
<b>Near Misses (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Criticality Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Radiological Concerns (1)</b> <ul style="list-style-type: none"> <li>A graduate student/teaching assistant received an eye exposure to a class IIb pulsed YAG laser beam operating at 1064 nm, in the invisible infrared region. The student was not wearing protective eyewear and received damage to his eye. An independent panel appointed by DOE has been chartered to review the LBNL and the campus' laser safety programs and the incident. The Lab expects this report to be completed by mid-summer of 2003.</li> </ul>	<b>AB Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Materials Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Occupational Safety/Industrial Hygiene (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Con Ops (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Equipment Failure/degradation (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Environmental Releases/Compliance (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Fire Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	

### Progress on Safety Management Initiatives:

- Best Practice Review of LBNL Hazard Analysis System.** A panel of industry experts conducted a review of best practices of the Laboratory's hazard analysis system in January 2003. The panel, comprising of individuals affiliated with IBM, Lam Research, DOE/HQ, and private business, concluded that the Laboratory has a system that "goes beyond the expectations of the hazards assessment practices that are considered best practices in industry." The panel further stated that the requirements of the DOE-equivalent hazard analysis system (i.e., OAK SD 5481.1B, Safety Analysis and Review System) "would not lend additional value toward the goals of hazard analysis at LBNL." As a result, LBNL is recommending to DOE that OAK SD 5481.1B be deleted from the Lab's Work Smart Standard (WSS) set.
- Certified or Independently Validated ES&H Systems.** As part of a multi-year effort, the EH&S Division of LBNL has identified ten candidate ES&H programs for certification or independent validation. The candidate programs encompass environmental management systems, occupational safety and health, occupational medicine, analytical laboratories, instrument calibration, and emergency management. Action plans to achieve certification or validation for each program will be developed by the end of the second quarter.
- Accident Photo Program.** For the past several years, the Lab's Occupational Health Services has been taking photos of accident scenes to assist in the investigation of the accident. OHS staff members are at the accident site within 24 hours to photograph evidence on the hows and whys of the mishap. The images are sent electronically to the supervisor, the

division safety coordinator, and the EH&S division liaison to facilitate a good accident investigation, as well as providing lessons learned discussions within the department. Starting with this past month, safety photos have become a regular feature of "Today at Berkeley Lab," the Lab's daily e-mail newsletter. The first safety photo pointed out the hazards of utility knives that do not retract their blades completely, thus exposing employees to the almost hidden blade tips. It is hoped that a broader dissemination of the most frequently captured accident images will raise awareness and lower incidence over the coming months.

- In February, the Laboratory's Facility Division switched from regular diesel to biodiesel as the fuel that powers the Lab's 13 buses. The switch was made in part to satisfy requirements established in Executive Orders 13031 (Federal Alternative-Fueled Vehicle Leadership) and 13149 (Greening of the Government Through Federal Fleet and Transportation Efficiency). A formula, based on miles driven, determines the credit received by the Lab under these Executive Orders for this switch. Berkeley Lab has typically used nearly 40,000 gallons per year of diesel. Though biodiesel is presently about 25% more expensive, a savings of nearly 20% in annual diesel fuel usage is estimated from the higher energy content of biodiesel compared to diesel. Thus far after six weeks of using B20, there are no reported problems regarding the performance of the buses.

**This page intentionally left blank**

## QUARTERLY REPORT *January – March 2003* Oak Ridge National Laboratory (ORNL)

### Safety-Related Mission Areas of Interest

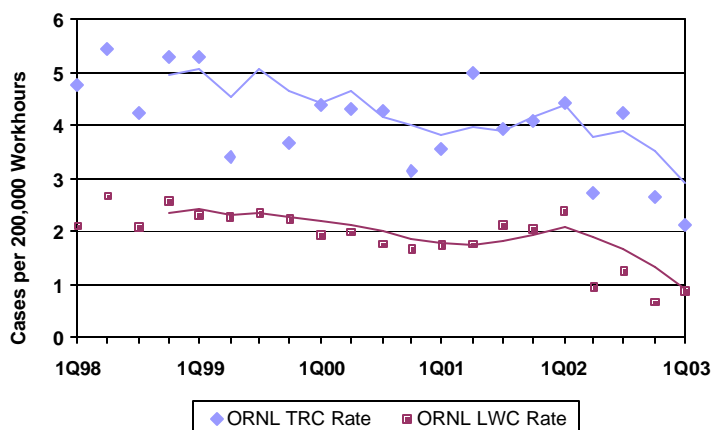
ORNL is a multi-program science, technology, and energy laboratory with distinctive capabilities in materials science and engineering, neutron science and technology, energy production and end-use technologies, mammalian genetics, environmental science, and scientific computing. UT-Battelle, LLC, as the managing and operating contractor for the DOE, is committed to systematically carrying out its missions in a manner that achieves excellence, cost-effectiveness, and competitiveness in R&D, while simultaneously protecting its workers, the public, and the environment.

1. In February, ORNL moved past the milestone of two million hours of safe work with no cases of lost time away. The RII rate of 2.0 is lower than the SC average and is approaching "Best in Class" (Dupont – 1.8).
2. As a result of an investigation of a servo motor event at HFIR (ORO-ORNL-X10HFIR-2003-0002), management discovered issues that impacted Research Reactors Division's ability to meet management expectations of performance. HFIR was placed in a management stand-down from February 2, 2003 to March 30, 2003 to effect appropriate performance improvement. Further improvement actions are on-going. As a result of the HFIR activities, management is sharing lessons learned with the remainder of the Laboratory.

### Areas for Management Attention

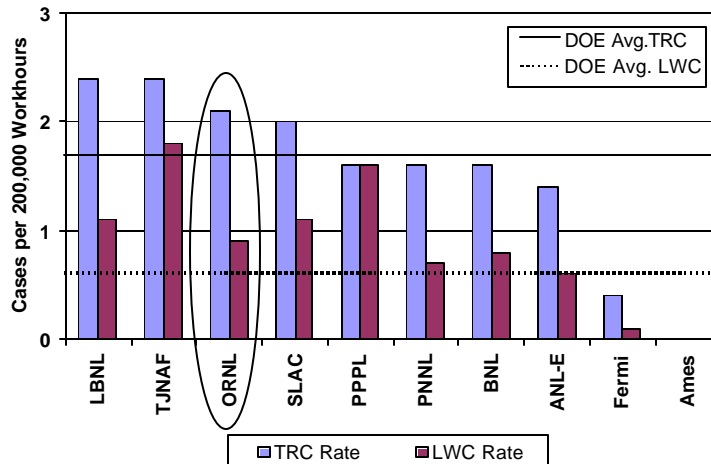
1. The DOE Oak Ridge Operations (ORO) Chief Financial Officer (CFO) performed a study to determine funding responsibility for ORNL newly generated waste. (Note: On 10/28 the ORO CFO recommended that "it was in the best interest of the Government to leave the management, contractual, and budget responsibility for the newly generated waste activities at ORNL with the EM program under the current process configuration.") Both EM and SC in Oak Ridge are developing a schedule to outline an orderly transition of newly generated solid waste back to the generator over several years as the EM backlog of legacy waste is worked off.
2. OSHA/NRC inspections in support of a potential transition to external regulation are scheduled during May and June 2003 at ORNL. The level of resources that need to be dedicated during this inspection process by both the DOE and Contractor is significant.

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter



## Key Performance Areas

There were 28 occurrences this quarter: 13 SC, 12 NE, and 3 EM.

<b>Near Misses (2)</b> <ul style="list-style-type: none"> <li>• The power supply to an electrophoresis gel box was left on. The top was off and the leads were connected to the power supply. There was a potential for contact with metal sleeves inside the insulation. The manufacturer confirmed there was a shock potential. (SC)</li> <li>• A researcher in a company vehicle ran off the road and hit several trees. An ambulance responded to the scene. The researcher was not admitted to the hospital; however, the vehicle was totaled. (SC)</li> </ul>	<b>Environmental Releases/Compliance (0)</b> <ul style="list-style-type: none"> <li>• None</li> </ul> <b>AB Infractions (2)/Potential Infractions (2)</b> <ul style="list-style-type: none"> <li>• A Limiting Condition for Operation mandating the frequency of oxygen deficiency instrumentation calibration was exceeded by 5 days. (SC)</li> <li>• The level indicators used to verify day tank fuel levels for the emergency diesel generators were determined not to be on a calibration schedule as required. (NE)</li> <li>• The load capacity of the crane hoist used to lift the door to hot cell A was less than the weight of the door. The hoist was not in an inspection program. (NE)</li> <li>• As found condition not consistent with data set used in the basis for the facility safety characterization. (EM)</li> </ul>
<b>Radiological Concerns (7)</b> <ul style="list-style-type: none"> <li>• 3 occurrences of contamination found outside radiologically posted areas. (2 SC, 1 NE)</li> <li>• 2 occurrences of contamination found inside radiologically posted areas. (1 SC, 1 EM).</li> <li>• 1 personnel contamination (shoe). (NE)</li> <li>• Three techs had not regularly signed the RWP. (NE)</li> </ul>	<b>Shipping QA (1)</b> <ul style="list-style-type: none"> <li>• Personnel received a shipment of 10.1 millicuries of radioactive krypton-85 gas and found inner packing material to be contaminated. (SC)</li> </ul>
<b>Criticality Infractions (0)</b> None	<b>Equipment Failures/Equipment Degradation (7)</b> <ul style="list-style-type: none"> <li>• The circuit breaker for a feeder opened and re-closed due to a fault in the circuit, energizing a transformer. When deenergized, an arc flash vented out the top of the cabinet. Cause was due to damaged cable during new installation by private subcontractor. (SC)</li> <li>• Electrical power loss to several switch yard feeders resulted in a power surge affecting four buildings. 30 of the fans received enough charge to burn out the motors. (SC)</li> <li>• Safety Channel No. 2 was tripped, and its servo motor was turned off as a prerequisite for I&amp;C to calibrate neutron flux. The reactor was manually scrammed after power was noticed to fall at least 10%. (NE)</li> <li>• HFIR Shutdown extension. (NE)</li> <li>• The pressures in the Building 4501 hot cells were found in the alarm condition for insufficient negative pressure. (SC)</li> <li>• The standby battery required to keep the Pony Motor Battery Room door holder in the open position during ac power outages and/or its charger failed. (NE)</li> <li>• During the performance of the Channel No. 2 neutron flux electronics calibration, it was noticed that the FFED flux meter was fluctuating between 40% to 90% and the safety trip module actuated and cleared several times. The remaining channels showed no change. (NE)</li> </ul>
<b>Occupational Safety/Industrial Hygiene (1)</b> <ul style="list-style-type: none"> <li>• Fall protection not utilized during mock up exercise at the shutdown Bulk Shielding Reactor building. (EM)</li> </ul>	
<b>Conduct of Operations (6)</b> <ul style="list-style-type: none"> <li>• During breaker maintenance, the latch light on a safety channel module illuminated indicating a locked-in alarm condition. The possible effect of PM on safety systems was not recognized during planning. (NE)</li> <li>• An empty container for used reactor components had been stored in the same fuel storage array as a full container contrary to Fuel Management Procedure. (NE)</li> <li>• Facility modifications (penetrations) to a safety significant wall were commenced without initiating appropriate configuration control processes. (NE)</li> <li>• An unexpected chemical reaction may have produced a potentially toxic material. (SC)</li> <li>• A frozen sprinkler head caused a pipe break and discharged water over a transformer, which faulted and caused a power outage to 8 buildings. Sprinklers not protected from freezing. (SC)</li> <li>• During excavation for installation of a telecommunications duct bank, a subcontractor broke a 4" vitreous clay steam condensate drain line. (SC)</li> </ul>	
<b>Fire Safety (0)</b> None	<b>Electrical Safety (0)</b> None
<b>Material Handling (0)</b> None	<b>Other (0)</b> None



## QUARTERLY REPORT January - March 2003

### Pacific Northwest National Laboratory (PNNL)

#### Safety-Related Mission Areas of Interest

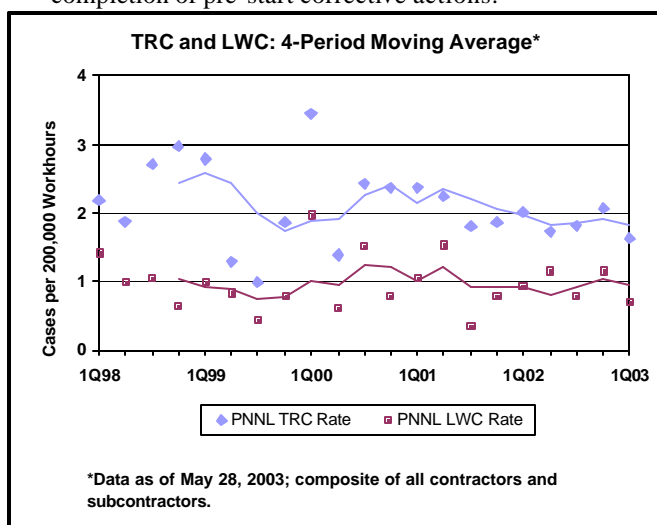
PNNL conducts high quality, leading edge, scientific research in the areas of fundamental science, environmental technology, energy science and technology, and national security. PNNL work is conducted in both government and private facilities, and includes a major user facility, the Environmental Molecular Sciences Laboratory.

1. **New Risk Management System:** A new Electronic Prep & Risk (EPR) system was rolled-out at PNNL on April 14, 2003. The new system provides much better risk management at PNNL through:

- improved risk identification,
- integration of risk mitigation methods across PNNL,
- connectivity with appropriate subject matter experts, and
- strong risk review and work authorization.

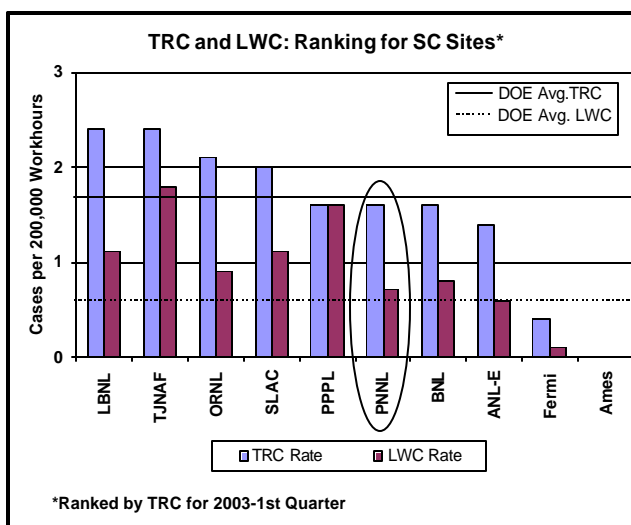
Product Line Managers approve a Risk Mitigation Assessment (for proposals) and a Risk Mitigation Permit (for funded projects), before work is authorized to begin. This more rigorous work authorization process, as well as system performance enhancements, constitutes a substantial improvement over the old EPR process.

2. **Temporary Work Suspension:** During this quarter, an incident occurred where a hammer was drawn into an electro-magnet causing an injury to a researcher's finger. Due to this incident, a temporary suspension of magnet operations was instituted. There was negligible impact on the research schedule and there was no damage to the equipment, and no data was lost. Corrective actions are being put in place to prevent future occurrences of this type, including additional training, installation of physical shields on magnets, and increased requirements for maintenance work. Operations were resumed following completion of pre-start corrective actions.



#### Areas for Management Attention

1. **Radiological Control:** During this quarter, the number of personnel radioactive contamination events was lower (2 events out of 5,760 staff entries to radiological areas) than in the previous quarter (which was 4 events out of 4,725 staff entries). These events were detected by routine exit survey processes designed to prevent the spread of any contamination beyond radiologically controlled areas. PNNL continues to work on improvements to the radiological control program, including activities to minimize personnel contaminations, enhancements to radiological work planning processes, procedure revisions, orientation of staff, and the issuance of lessons learned.
2. **Hanford 300 Area Accelerated Cleanup Impacts on PNNL Mission:** The current DOE initiative to accelerate the Hanford cleanup schedule indicates significant cost savings can be achieved by reducing the life-cycle cleanup costs associated with the legacy 300 Area facilities, including reductions in surveillance and maintenance costs of deactivated facilities. Supporting this initiative provides a challenge to ensure that science and technology mission objectives are met, and critical capabilities are not lost during the transition out of the legacy facilities. In addition, early closure of these facilities will include closure of current PNNL RCRA permitted Treatment, Storage, and Disposal facilities (as early as FY05). PNNL has initiated actions to ensure that waste management activities can continue and is evaluating alternative options. A determination of whether a new TSD is needed will be decided by May. Part of the long term strategy being worked on is to apply for PNNL permits (separate from the Hanford site) for Effluent permits and RCRA permits.



## Key Performance Areas

(There were 9 occurrences this quarter.)

### Near Misses (1)

- A 2-liter Pyrex culture bottle inoculated with an anaerobic methane producing bacterium shattered due to unanticipated over pressurization, fracturing the inner safety glass pane on a refrigerator size incubator door. The outer safety glass pane remained intact, and the door opened a couple of inches. No one was injured in the event. *CA: Develop a Safe Operating Procedure that addresses anaerobic cultures and requires the use of a pressure relief valve for growing gas-producing anaerobic cultures in containers larger than 170 ml.*

### Equipment Degradation (0)

- None

### Material Handling (0)

- None

### Radiological Concerns (3)

- There were two (2) personnel contamination events during the quarter (both were clothing contaminations). The contaminations did not cause any dose to staff, no intakes of radioactive material into the body, and no spread of contamination outside of radiological areas. These events were detected by routine survey processes. *CA: The shoe/clothing articles were decontaminated and returned to staff, or confiscated as appropriate.*
- Management Concern: A staff member's work practices may not have been in accordance with procedural requirements. Contamination was detected on the floor of the Radiological Buffer Area, and prompted an investigation (the level of contamination did not meet reporting criteria under 1D, therefore this was identified as a 10 C, Cross-category item). *CA: Access to the area was restricted, and the staff member's radiological worker qualifications were suspended until further evaluation.*

### Criticality Infraction (0)

- None

### Safeguards and Security (0)

- None

### AB Infractions (0)

- None

### Fire Safety (1)

- A small fire was discovered in a fume hood in a laboratory by a research staff member arriving at work. The fire was started by a malfunctioning hotplate. *CA: The staff member put out the fire and called the single point contact. Pending further review.*

### Shipping QA (1)

- Two shipping containers containing one 13-curie sealed cesium-137 source each were shipped from PNNL to the freight broker's site prior to overseas shipping. The tamper-indicating devices (TID) were found missing by the freight broker upon receipt of the containers. Photographic documentation from records show the containers with TID's in place when it left PNNL. The containers were subsequently inspected, and the internal containers were found intact with the closure bolts secured, when inspected at the freight brokers site. The containers met DOT requirements for shipping and labeling. *CA: Upon further review, it was determined that this was attributed to tampering, vandalism or sabotage. A lessons learned will be issued. Shipping containers will be over-packed in wood crating to help prevent recurrence.*

### Conduct of Operations (2)

- A lecture bottle with Krypton (K-85) gas was discovered leaking in a research lab. Project staff did not update the hazard identification documentation (upon a change of project scope) subsequently causing non-permitted material (K-85 gas) in the facility. *CA: The gas was transferred to another lecture bottle. Washington State Dept of Health (WDOH) was notified; facility permit changes are being submitted; management systems are being reviewed and strengthened.*
- A 55 gal drum of waste was inadvertently mislabeled, and subsequently shipped for disposal. The drum was buried by the waste receiver prior to discovery of this event. This event is associated with events identified through the Non-compliance Tracking System (NTS) #RL-PNNL-PNNLBOPER-2002-0006. *CA: Corrective actions for this event are consistent with CA for the NTS cited above, i.e., notify waste receiver; clarify expectations, revise procedures, train staff, inventory radiological waste holdings, obtain independent review of event.*

### Electrical Safety (0)

- None

### Environmental Releases/Compliance (0)

- None

### Occupational Safety/Industrial Hygiene (1)

- A staff member conducting work near an electro magnet passed close by the magnet with a hammer in his hand. The magnetic field rapidly drew the hammer to the magnet. The injury occurred when he attempted to recover the hammer, causing a contusion to his finger, which required stitches. *CA: Work stand down instituted, additional training provided, install physical shields on magnets, and require maintenance work to be planned in advance.*

## **Progress on Safety Management Initiatives**

- A decision was made to delay application for EPA Performance Track. The decision was made based on input from the Washington Department of Ecology (WDOE). Due to disputes over Hanford Site cleanup issues between EPA, DOE, and WDOE and the existing PAAA NTS on Programmatic Waste Operations Deficiencies, WDOE cannot fully support the application at this time. As the waste operations deficiencies are resolved and the relationship with WDOE and DOE is rectified, communications will be maintained with WDOE to determine an appropriate time for application. When it is appropriate, it is anticipated that the application will be submitted.

## **Other Descriptive Information**

- In response to recent incidents regarding electro-magnets and due to a request by SC-3, a 2-page fact sheet has been prepared to describe how the work permitting process works at PNNL, how DOE assures that it is working properly, any issues that have been identified, and improvements that are being made. The fact sheet is attached.

**This page intentionally left blank**

## QUARTERLY REPORT

### *January – March 2003*

### Princeton Plasma Physics Laboratory (PPPL)

#### Safety-Related Mission Areas of Interest

PPPL is a Collaborative National Center for plasma and fusion science. Its primary mission is to develop the scientific understanding and the key innovations, which will lead to an attractive fusion energy source. Associated missions include conducting world-class research along the broad frontier of plasma science and technology, and providing the highest quality of scientific education.

#### Areas for Management Attention

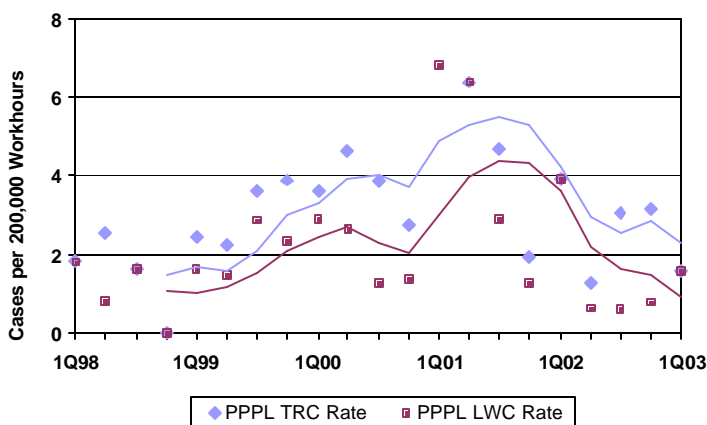
1. Follow-up actions from the 2002 Safety Forum are progressing. Actions are grouped into the following major themes:
  - a. Improve the manner in which line managers are prepared for their safety responsibilities;
  - b. Reinforce safety knowledge & skills through classroom training;
  - c. Improve the ability of workers to recognize hazards;
  - d. Improve the methods used to communicate safety information & expectations.

Specific actions that are being pursued include:

Providing line manager training on safety responsibilities; and developing a new course that provides instruction to staff to improve skills to readily recognize workplace hazards and engineering and administrative methods employed to control them. The Lab has also developed new diversified methods to communicate worker safety information and expectations. The new monthly PPPL ES&H Newsletter and the new web-based ES&H 'Drop-Box' are examples of communication tools that were recently developed and are very effective.

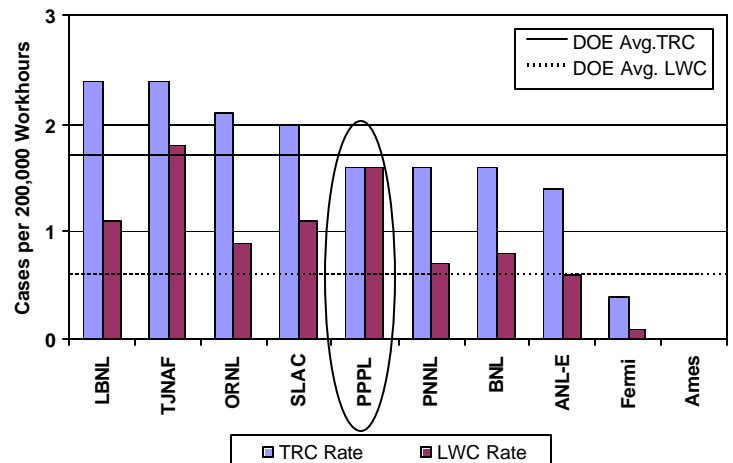
2. PPPL experienced only 2 recordable occupational injuries in the first quarter of CY2003, compared to 6 in the first quarter of 2002

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter

# Key Performance Areas

(There were 4 occurrences this quarter.)

<b>Near Misses (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Radiological Concerns (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Criticality Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>AB Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Environmental Releases/Compliance (2)</b> <ul style="list-style-type: none"> <li>Plant maintenance was called to investigate loss of HVAC cooling in the Mockup Building clean room. Upon inspection of the HVAC unit it was discovered that a small amount of refrigerant oil (&lt; 2 quarts) had run off the edge of the pad into the stone surrounding the pad. A copper unit pipe failed causing oil to spill on to the ground. The pipe failed after extensive use. <i>Oil spill bags and absorbent were placed around the spill to contain and absorb the oil. Inspections were conducted but the pipe was located in an area where the defect could not be evaluated. NJDEP was notified, however there was no impact on the environment. The broken pipe will be repaired and Preventive Maintenance on these types of units will be increased.</i></li> <li>A vehicle parked in the C-Site Lower "N" parking lot spilled gasoline on the road leading into the parking lot. Some of the gasoline was washed into the storm sewer by the rain and a small amount of gasoline was detected in the swale at C-Site. Absorbents were put down and damming around the storm drain was initiated. The vehicle was not identified, since it had proceeded off site. Corrective measures were taken to mitigate the occurrence.</li> </ul>	<b>Fire Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
	<b>Conduct of Operations (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
	<b>Occupational Safety/Industrial Hygiene (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
	<b>Other (1)</b> <ul style="list-style-type: none"> <li>PPPL personnel from the Receiving, AC Power and QA organizations inspected a shipment of Breaker Trip Units and considered the units suspect due to labeling and wear marks. The units were ordered from a parts broker that drop-ships merchandise without inspecting the parts. The original equipment manufacturer does not authorize refurbishments of these units. <i>The suspect units were identified immediately by PPPL and were held for investigation. They are currently quarantined pending disposition. PPPL QA is working with DOE and IG representatives on the disposition of these units. PPPL is evaluating the practice of ordering from parts brokers.</i></li> </ul>
<b>Material Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Equipment Failures (1)</b> <ul style="list-style-type: none"> <li>On the first plasma attempt of 2/14/2003, an audible report and smoke were recorded on the NSTX test cell monitors and the Toroidal Field (TF) power supply tripped off with a ground fault indication. The NSTX test cell smoke detection system alarmed. <i>Electrical systems were put in a safe state to allow initial test cell access by the PPPL Emergency Services Unit (ESU) in accordance with alarm response procedure. Upon clearance from ESU and PPPL Industrial Hygiene, NSTX engineering began preliminary inspections, noting carbon deposits from an apparent electrical flashover, a possible mechanical failure of an electrical connection, and indication of a subsequent TF system coolant leak. Further disassembly is required for a comprehensive evaluation of the failure. This occurrence was reported as "off-normal" in anticipation that this failure may result in repairs exceeding \$10,000, or in an extended shutdown of the NSTX device. Failure evaluation by NSTX engineering is in progress. An event review team was appointed and investigation of events leading up to the incident began on 2/14/2003.</i></li> </ul>
<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	

## **Progress on Safety Management Initiatives**

- PPPL has begun activities to prepare for External Regulation reviews by the Occupational Safety and Health Administration (OSHA) and the Nuclear Regulatory Commission (NRC). OSHA will conduct a Site Inspection at PPPL during the week of August 11th. The NRC will also conduct a site inspection at PPPL sometime this summer. PPPL will use the results of these Site Inspections to prepare a cost estimate for coming into full compliance with OSHA and NRC regulations. PPPL will take some preparatory actions prior to the OSHA and NRC visits.
- Over a period of several months, the ES&H and Infrastructure Support Department worked closely with DOE-Princeton Area Office to develop a comprehensive plan and schedule for the assessment of ES&H functions at PPPL. The resulting Assessment Schedule integrates a variety of oversight activities ranging from DOE surveillances to QA Audits to internal self-assessments. This approach considers all ES&H areas and results in the efficient allocation of PPPL and PAO assessment resources where they are most beneficial. At the end of the Fiscal Year, the matrix will serve as a tool to help evaluate PPPL's overall ISM performance, and subsequently determine what assessments are warranted for future years.
- In light of heightened security concerns related to the conflict in Iraq, the Laboratory has taken active measures to create, update and maintain emergency plans and procedures. Laboratory officials renewed close working relationships with University, Local, State, DOE and Federal authorities. PPPL routinely communicates with these groups to stay informed of security situations that may affect the Laboratory and/or the surrounding community. A new web-based resource was prepared that provides useful reference material to clarify questions members of the staff have raised about: actions to take when security conditions/threat levels change; the manner in which they will be kept informed of changing conditions; personal actions they should be considering in the event that the threat level changes to 'red.'
- The Medical Center at Princeton has been awarded the contract to operate the Office of Occupational Medicine. The Medical Center's Department of Corporate Health Services (CHS) will be responsible for staffing and administering the day-to-day operations of the OMO. The Medical Director for the OMO is Dr. Christine R. Medora. Dr. Medora is Board Certified in Occupational and Internal Medicine and will be supported by a professional nursing staff and administrative personnel.

**This page intentionally left blank**



## QUARTERLY REPORT

### January - March 2003

## Stanford Linear Accelerator Center (SLAC)

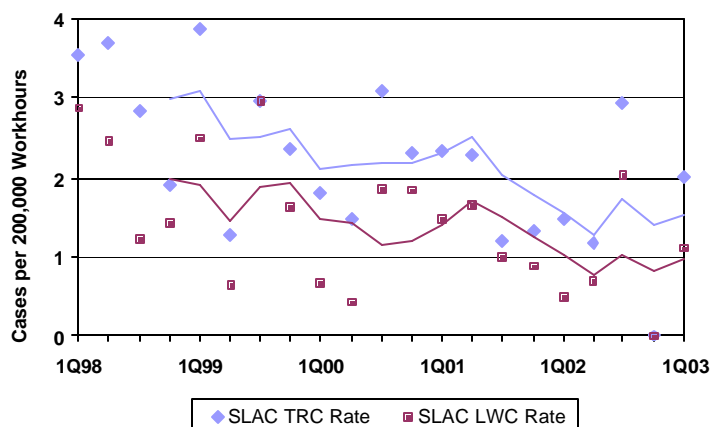
### Safety-Related Mission Areas of Interest

SLAC's mission is experimental and theoretical research in elementary particle physics using electron beams, as well as a broad program of research in atomic and solid state physics, chemistry, biology, environmental science, and medicine using synchrotron radiation.

### Areas for Management Attention

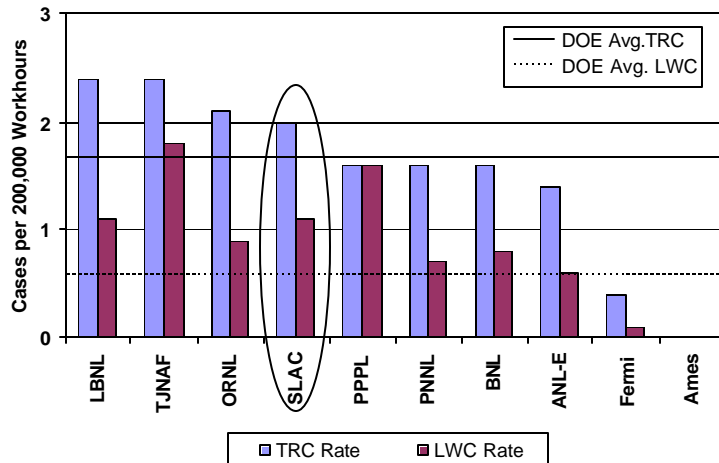
1. On January 28, 2003, a SLAC systems engineer sustained head injuries as the result of a fall from a ladder at an RF power supply at the Stanford Synchrotron Radiation Laboratory. The fall resulted in the hospitalization of the employee. On February 5, 2003, a Type B Accident Investigation Board was appointed by the Director of the SSO (DOE Appointing Official) to conduct the investigation of the accident under DOE Order 225.1A. The employee has since returned to work.
2. The investigation was conducted by the Board from February 6 through 24, 2003 and the report was submitted to the Appointing Official on February 25, 2003. In response to the conclusions and judgments of need identified in the final report, SLAC and SSO developed Corrective Action Plans (CAPs) that were submitted to the Office of Science on April 11, 2003 for approval and to the Assistant Secretary for Environment, Safety and Health (EH) for comment.
3. The SSO is in the process of modifying the contract to incorporate corrective actions resulting from the accident investigation. Completion of the milestones and tasks will be verified and validated by DOE.

TRC and LWC: 4-Period Moving Average\*



\*Data as of May 28, 2003; composite of all contractors and subcontractors.

TRC and LWC: Ranking for SC Sites\*



\*Ranked by TRC for 2003-1st Quarter

<b>Key Performance Areas</b> <b>(There was 1 occurrence this quarter.)</b>	
<b>Near Miss (1)</b> <ul style="list-style-type: none"> <li>A SLAC employee sustained head injuries as a result of a fall from a ladder at an RF power supply. The fall resulted in the hospitalization of the employee. On February 5, 2003, a Type B Accident Investigation Board was appointed by the Director of the SSO to conduct the investigation of the accident under DOE Order 225.1A. The investigation was conducted by the Board from February 6 through 24, 2003 and the report was submitted to the Appointing Official on February 25, 2003</li> </ul>	<b>AB Infractions (0)/Potential Infractions (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Radiological Concerns (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Criticality Infraction (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Shipping QA (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Environmental Releases/Compliance (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Fire Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Safeguards and Security (0)</b> <ul style="list-style-type: none"> <li>Not available</li> </ul>
<b>Occupational Safety/Industrial Hygiene (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Material Handling (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Equipment Degradation (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Conduct of Operations (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>
<b>Other (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>	<b>Electrical Safety (0)</b> <ul style="list-style-type: none"> <li>None</li> </ul>

### Progress on Safety Management Issues:

- On April 2, 2003, the SSO and SLAC were notified that U.S. EPA Region 9 selected two SLAC nominations to receive the "Champion of Green Government" Awards. The two projects receiving awards support the Secretary's Pollution Prevention and Energy Efficiency Leadership goals by achieving significant reductions in hazardous waste generation at the electroplating shop and by successfully reusing or reclaiming a large waste stream at the facility. The projects for waste diversion included: returning old fire protection and gas cylinders to the original manufacturers, returning empty chemical containers to vendors, sending lab chemicals and hazardous products to on-site users at SLAC, collecting and crushing empty metal containers and sending metals to recycler, and collecting and recycling empty plastic containers containing household cleaners. The waste reduction efforts resulted in significant cost savings to the Laboratory.
- Type B Accident Investigation and Corrective Action Plan (CAP)  
Two important areas that are addressed in the SLAC CAP are line management responsibility and accountability for safety and, work planning and controls and hazard analyses. First, the CAP requires SLAC to develop a systematic process for conducting area and task-specific hazard analyses for both routine and non-routine work activities. Second, SLAC will be required to enhance the process for developing line management responsibility and accountability for safety.
- The SSO CAP focuses on the need for the SSO to ensure that the DOE/Stanford University contract is modified to incorporate all of the tasks and milestones related to the Laboratory's implementation of corrective actions in the important areas discussed above. The SSO will validate completion of all of the milestones in the SLAC CAP through regular meetings with the Laboratory, formal quarterly meetings between DOE and the Laboratory on the status of completion of milestones, the year end annual performance assessment in ES&H, combined DOE and DOE Laboratory peer reviews, and implementation of the ongoing SSO Operational Awareness program

**QUARTERLY REPORT***January – March 2003***Thomas Jefferson National Accelerator Facility (TJNAF)****Safety-Related Mission Areas of Interest**

TJNAF's main mission is basic research into the quark structure of matter. TJNAF is also active in the development of high power free electron lasers. Core competencies include superconducting radiofrequency technology, 2K cryogenics, and high power free electron lasers.

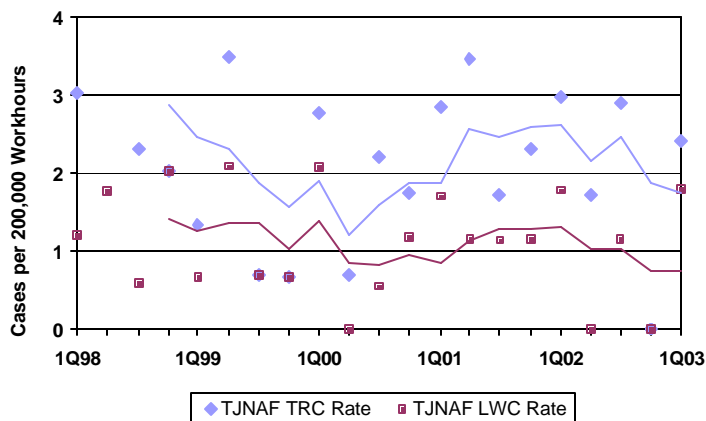
1. The Laboratory experienced a subcontractor injury in January and three Laboratory staff lost time injuries in March. These injuries were reported and are reflected in the LTW data below. The injuries were such that they did not present themselves for a trend analysis.

**Areas for Management Attention**

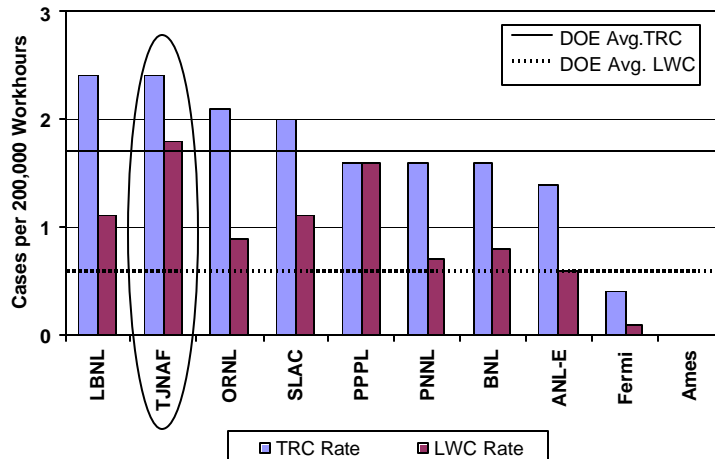
1. Over the last year the Oak Ridge Operations Office (ORO) complex has experienced 12 electrical related incidents. In order to learn from these incidents, the Oak Ridge Operations Manager instructed that a "For-Cause" Review of electrical incidents be performed. Jefferson Lab is included in this review because we had three of the twelve incidents. We are working with the ORO Team identified to review the planning and activities leading up to these incidents. A consolidated ORO report is expected by May 2, 2003. The key conclusion of the report states that if the control measures outlined in the report for each of the three types of electrical events (penetrations, excavations, and work on or near energized systems) are used at the sites across DOE there will be measurable reduction in electrical near-miss events.

Update from previous quarters:

The Deputy Radiation Control Manager has left the Lab to accept a position as the DOE Laboratory Accreditation Program (DOELAP) Manager. This is an important position that needs to be filled as quickly as possible and requires senior management's support. From a pool of 19 applicants, 5 have been selected for interviews during April 24 – 30, 2003. A decision is targeted for early May.

**TRC and LWC: 4-Period Moving Average\***

\*Data as of May 28, 2003; composite of all contractors and subcontractors.

**TRC and LWC: Ranking for SC Sites\***

\*Ranked by TRC for 2003-1st Quarter

<b>Key Performance Areas</b> (There were no occurrences this quarter.)	
<b>Near Misses (0)</b> • None	<b>ConOps (0)</b> • None
<b>Radiological Concerns (0)</b> • None	<b>AB Infractions (0)</b> • None
<b>Shipping QA (0)</b> • None	<b>Safeguards and Security (0)</b> • None
<b>Fire Safety (0)</b> • None	<b>Environmental Releases/Compliance (0)</b> • None
<b>Criticality Infractions (0)</b> • None	

### Progress on Safety Management Initiatives

- As part of site accident/incident investigations, the Laboratory has included a table for ISMS Principles and Core Functions so that accident/incident investigators are required to identify a corresponding ISMS principle and core function for each cause leading to a corrective action and/or lesson learned.
- The local Fire Department personnel attended a special training and familiarization session at TJNAF describing the unique aspects of the Laboratory's radiological contamination controls.
- In the external regulation area the NRC pre-visit occurred on April 29, 2003. The NRC reviewer stated that he got a sense of the radiation program at the Laboratory and found that it was a professionally run program. The actual NRC review team of about three people should return to perform the actual external regulation assessment in July 2003.